

AMENDMENTS
In the Claims

Current Status of Claims

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100.(currently amended) A flexible laminate comprising a monofilm-formed or
multifilm-formed flexible ply A, and ~~another~~ a monofilm-formed or multifilm-formed flexible ply
B, both comprising orientable thermoplastic polymer materials, in which the ply A has a fluted
configuration and the ply B on a first side is adhesively bonded in bonding zones to crests on a first
side of the ply A,
where:

- (a) the ply B also has a fluted configuration, a flute direction of the ply B forms an angle
from about 30° up to and including 90° to a flute direction of the ply A and the
bonding zones being on crests of the first side of the ply B to produce spot bonds
with the crests on the first side of the ply A,
- (b) the adhesive bonding is
 - (i) directly between the ply A to the ply B and established through a lamination
layer on the ply A and/or the ply B;
 - (ii) established through a separate thin bonding film; or
 - (iii) through a fibrous web adapted for bonding, and
- (c) wavelengths of the flutes in the ply A and/or the ply B are no longer than 5 mm, and
the wavelengths of the flutes in both the ply A and the ply B are less than 10 mm, and

(d) the ply A is molecularly oriented in a direction parallel or substantially parallel to its flute direction as determined by shrinkage tests the bonding forms channels by the flutes in the ply A and the ply B; at least some of the channels filled with a filling material, where the material is a preservative for goods intended to become packed in or protected by the laminate, and where the preservative is selected from the group consisting of an oxygen scavenger, ethylene scavenger, and a biocide.

101.(previously presented) The laminate according to claim 100, wherein either a thickness of each of the plies is substantially the same in the bonding zones and non-bonding zones, or at least one of the plies exhibits first zones extending parallel to the flute direction, each bonding zone being substantially located within a the first attenuated zones whereby each first attenuated zone is understood as delimited by the positions where the thickness is an average between a minimum thickness of this ply within the first attenuated zones and a ply's maximum thickness within adjacent non-bonding zones.

102.(previously presented) The laminate according to claim 100, wherein the flute wavelength in each of the two plies is no more than 4 mm.

103.(previously presented) The laminate according to claim 100, wherein each of the two plies a curved length of a flute is on average at least 5% longer than the linear wavelength, the curved length being understood as the length of a curve through a cross section of a full flute wave including the bonding zone which curve lies in the middle between the two surfaces of the ply.

104.(canceled)

105.(previously presented) The laminate according to claim 103, wherein a width of each bonding zone in at least one of the two plies is no less than 15% of the flute wavelength.

106.(previously presented) The laminate according to claim 100, wherein the flutes in at least one of the two plies are evenly formed and extend in a substantially rectilinear shape.

3 parallel to its flute direction, both referring to the cross- section of the respective ply and determined
4 in non-bonded narrow strips at an extension velocity of 500%min⁻¹, is no less than 30 MPa.

1 115.(previously presented) The laminate according to claim 100, wherein the ply B has a lower
2 coefficient of elasticity than the ply A, both as measured in the direction perpendicular to the flute
3 direction of the ply A.

1 116.(previously presented) The laminate according to claim 112, wherein the choice of material
2 for the ply B and of depth of the ply A's fluting is such that by stretching of the laminate
3 perpendicular to the direction of the ply A's fluting up to the point where the ply A's waving has
4 disappeared, the ply B still has not undergone any significant plastic deformation.

1 117.(previously presented) The laminate according to claim 112, wherein the ply B, outside its
2 first attenuated zones if such zones are present, has a main direction of molecular orientation parallel
3 to the direction of the flutes or in a direction close to the latter as provable by shrinkage tests.

1 118.(previously presented) The laminate according to claim 112, wherein the ply A is composed
2 of several films, and the said main direction of molecular orientation, is the resultant of different
3 monoaxial or biaxial orientations in the said films optionally mutually differently directed.

1 119.(previously presented) The laminate according to claim 117, wherein the ply B is composed
2 of several films, and the said main direction of orientation is the resultant of different monoaxial or
3 biaxial orientations in the said films optionally mutually differently directed.

1 120.(currently amended) The laminate according to claim 101, wherein the first attenuated
2 zones are present in at least one of the two plies and if the first attenuated zones extend in their
3 transverse direction beyond corresponding bonding zones into adjacent non-bonding zones, the
4 extensions within each non-bonding zone are limited to a total width which leaves more than half
5 of of a width of the non-bonding zone as not belonging to any first attenuated zone, these widths
6 being the distances measured along the curved surfaces.

1 121.(previously presented) The laminate according to claim 101, wherein the first attenuated
2 zones are present in at least one of the plies and in which the bonding zones are substantially
3 coincident with the first attenuated zones.

1 122.(previously presented) The laminate according to claim 101, wherein the first attenuated
2 zones are present at least in one of the two plies and characterized by second solid-state-attenuated
3 zones between each pair of adjacent first attenuated zones, the second attenuated zones being
4 narrower than the first attenuated zones and located on non-bonded crests of the respective ply.

1 123.(previously presented) The laminate according to claim 101, wherein at least one of the two
2 plies exhibits solid-state-attenuated zones wherein the first attenuated zones of the ply are attenuated
3 so that the minimum thickness in such zone is less than 75% of the maximum thickness of the ply
4 in the non-bonded zones.

1 124.(previously presented) The laminate according to claim 100, wherein the ply A and the ply
2 B comprise a material which is orientable at room temperature.

1 125.(previously presented) The laminate according to claim 100, wherein the spot bonds between
2 the plies A and B is effected through a lower melting surface layer co-extruded on at least one of the
3 plies, formed in a coextrusion process.

1 126.(previously presented) The laminate according to claim 100, wherein at least one of the plies
2 comprises a barrier film designed for protection against oxygen or other gaseous materials.

1 127.(previously presented) The laminate according to claim 100, wherein at least some of the
2 flutes in one or both plies are flattened at intervals and bonded across each ones entire width at the
3 flattened locations to make two arrays of flutes to form closed pockets.

1 128.(previously presented) The laminate according to claim 127, wherein the flattened portions

2 of a number of mutually adjacent flutes or of all flutes are in an array.

1 129.(previously presented) The laminate according to claim 100, wherein by the choice of
2 polymer material or by an incorporated filler or by orientation, a coefficient of elasticity E in at least
3 one of the plies, measured in the non-bonding zones of the ply in the direction parallel to the flute,
4 as an average over the non-bonding zones is no less than 700 MPa.

130.(canceled)

131.(canceled)

1 132.(previously presented) The laminate according to claim 100, wherein both the ply A and the
2 ply B are supplied with a multitude of perforations, whereby the perforations do not reach into the
3 spot bonds, and the perforations in the ply A are displaced from the perforations in the ply B so as
4 to cause gas or liquid when passing through the laminate, to run a distance through the flutes
5 substantially parallel to the main surfaces of the laminate; channels formed by the flutes may be
6 closed to form pockets.

133.(canceled)

1 134.(currently amended) The laminate according to claim ~~133~~100, wherein by choice of
2 hydrophobic properties of at least the inner surfaces of the channels or pockets formed by the flutes
3 and by selected small spacing of said channels or pockets, and choice of the distances between the
4 mutually displaced perforations in the ply A and the ply B, there is achieved a desirable balance
5 between the pressure needed to allow water through the laminate and the laminate's capability to
6 allow air and vapour to pass therethrough.

1 135.(previously presented) The laminate according to claim 132, further comprising fibre film
2 portions of the fibrous web protruding from borders of the perforations of at least on one surface of
3 the laminate.

136.(canceled)

137.(canceled)

138.(canceled)

139.(canceled)

198.(canceled)

1 200.(previously presented) The laminate according to claim 102, wherein the flute wavelength
2 in each of the two plies is no more than 2 mm.

1 201.(previously presented) The laminate according to claim 103, wherein each of the two plies
2 the curved length of a flute is on average at least 10% longer than the linear wavelength.

1 202.(previously presented) The laminate according to claim 105, wherein the width of each
2 bonding zone in at least one of the two plies is no less than 20% of the flute wavelength.

1 203.(previously presented) The laminate according to claim 105, wherein the width of each
2 bonding zone in at least one of the two plies is no less than 30% of the flute wavelength.

1 204.(**currently amended**) The laminate according to claim 114, wherein the yield tension in the
2 ply A in a direction parallel to its flute direction and/or the yield tension in the ply B in a direction
3 parallel to its flute direction, both referring to the cross-section of the respective ply and determined
4 in non-bonded narrow strips at an extension velocity of 500%min⁻¹, is no less than 50 MPa and still
5 ~~more preferably no less than 75 MPa.~~

1 205.(previously presented) The laminate according to claim 114, wherein the yield tension in the
2 ply A in a direction parallel to its flute direction and/or the yield tension in the ply B in a direction
3 parallel to its flute direction, both referring to the cross-section of the respective ply and determined
4 in non-bonded narrow strips at an extension velocity of 500min^{-1} , is no less than 75 MPa.

1 206.(previously presented) The laminate according to claim 116, wherein the ply B comprises a
2 thermoplastic elastomer.

1 207.(previously presented) The laminate according to claim 120, wherein the total width of the
2 extensions leaves no less than 70% of the width of the non-bonding zone as not belonging to any
3 first attenuated zone.

1 208.(previously presented) The laminate according to claim 122, wherein the first attenuated
2 zones of the ply are attenuated so that the minimum thickness in such zone is less than 50% of that
3 maximum thickness.

1 209.(previously presented) The laminate according to claim 122, wherein the first attenuated
2 zones of the ply are attenuated so that the minimum thickness in such zone is less than 30% of that
3 maximum thickness.

1 210.(previously presented) The laminate according to claim 123, wherein the ply A and the ply
2 B comprise a polyolefin.

1 211.(currently amended) The laminate according to claim 129, wherein the average over the
2 non-bonding zone is no less than 1000 MPa.

212.(canceled)

1 213.(currently amended) The laminate according to claim ~~114~~ 114, wherein the laminate further
2 includes micro-perforations established in the flutes, which enhance the effect of the preservative.

1 214.(new) The laminate according to claim 100, wherein at least some of the channels formed
2 by the flutes in the ply A and the ply B, which channels may be closed to pockets, contain a filling
3 material in particulate, fibrous, filament or liquid form.

1 215.(new) The laminate according to claim 214, wherein the material is a preservative for goods
2 intended to become packed in or protected by the laminate, a corrosion inhibitor or a fire
3 extinguishing agent.

1 216.(new) The laminate according to claim 132, wherein the channels or pockets contain filling
2 material adapted to act as a filter material by holding back suspended particles from a fluid passing
3 through the channels or pockets or is an absorbent or ion-exchanger capable of absorbing or
4 ion-exchanging matter dissolved in such fluid, the filler optionally being fibre-formed or
5 yarn-formed.

1 217.(new) The laminate according to claim 134, used as a sanitary backsheet, on a diaper or as
2 a sheet for covering a patient during surgery.

1 218.(new) The laminate according to claim 134, used for insulation of buildings.

1 219.(new) The laminate according to claim 132, used as a geotextile which allows water to pass
2 but holds fine particles back.

1 220.(new) A bag made from the laminate according to any of the claims 100, wherein the flutes
2 on one of the two major surfaces of the bag are substantially perpendicular to the flutes on the other
3 major surface of the bag.

1 221.(new) The laminate according to claim 215, wherein the preservative is selected from the
2 group consisting of an oxygen scavenger, ethylene scavenger, and a biocide.